REMARKS

Claims 1-11 and 13-53, 55-60, and 68-75 are pending. Claims 54 and 61-67 are cancelled without prejudice and without disclaimer of the subject matter. Claims 1-5, 7, 11, 15-17, 20, 28-32, 34, 35, 42, 44, 46, 51, and 58 are amended. Claims 69-75 are newly added. No new matter was added. Support for the amendments may be found in at least paragraphs [0026]-[0029] of the specification. Applicant respectfully requests reconsideration in view of the amendments and the following remarks.

Interview Summary

Applicant thanks Examiner Jason D. Recek for the courtesies extended to the undersigned attorney during the telephone interview of December 29, 2009. During the interview, claims 1 and 2 were discussed in view of the cited references. Examiner Recek suggested amending claim 1 to include features of claim 2 and to add "multi-tasking" in front of "operating system." No agreement on claim language was reached.

Claim Objections

Claims 5 and 30 were objected to due to informalities. Claims 5 and 30 are amended and no longer contain the objected to informalities. These amendments are not narrowing and are not made in view of prior art. Accordingly, Applicant respectfully requests withdrawal of the objections to claims 5 and 30.

Claim Rejections – 35 USC §103

Claims 1-8, 11, 13-25, 28-36, 38-40, 42-49, 51, 53-59, and 61-68 were rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 5,761,430 to Gross et al. ("Gross") in view of U.S. Patent No. 5,487,167 to Dinallo et al. ("Dinallo") and U.S. Patent Application Publication 2001/0037382 A1 by Anttila ("Anttila"). Claims 9, 37, 50, 52, and 60 were rejected under 35 USC §103(a) as being obvious in view of the combination of Gross, Dinallo, Anttila, and U.S. Patent Application Publication 2007/0153774 A1 by Shay et al. ("Shay"). Claims 10, 27, and 41 were rejected under 35 USC §103(a) as being obvious in view of the combination of Gross, Dinallo, Anttila,

and U.S. Patent Application Publication 2001/0001564 A1 by Smyers ("Smyers"). Claim 26 was rejected under 35 USC §103(a) as being obvious in view of the combination of Gross, Dinallo, Anttila, and U.S. Patent No. 6,675,054 B1 to Ruberg ("Ruberg"). For the following reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest all of the features of claims 1-11 and 13-53, 55-60, and 68.

Claim 1

Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 1 of:

a network interface driver executable within the multi-tasking operating system, the network interface driver executable to receive via the network interface a stream of packets for the applications, where the stream of packets includes data packets and isochronous audio packets, transmission of the isochronous audio packets is in response to receipt of a respective synchronization packet, the isochronous audio packets include isochronous audio data, and the data packets are unrelated to the isochronous audio data; and

an isochronous audio driver executable within the multi-tasking operating system, the isochronous audio driver in communication with the network interface driver and the applications;

the network interface driver is executable to provide the stream of packets to the isochronous audio driver in response to an interrupt request provided to the network interface by the multi-tasking operating system; and

the isochronous audio driver is executable to decode isochronous audio packets in the stream of packets, to provide decoded audio data included in the isochronous audio packets to the isochronous audio application, and to pass the data packets unmodified to a protocol stack, the protocol stack being executable within the multi-tasking operating system to provide information in the data packets to the other applications, the execution of the isochronous audio driver being in response to said interrupt request provided to the network interface by the multi-tasking operating system.

(emphasis Applicant's).

Gross fails to describe the features of claim 1 of "a network interface driver executable within the multi-tasking operating system" (emphasis Applicant's) (*contra*,

Office Action, p. 4, lines 6-8.) In contrast, Gross describes a <u>circuit</u> that includes an Ethernet controller 12, an Ethernet transceiver 10 and a timing circuit 20. (Gross, Col. 2, lines 6-7; and Fig. 2A.) The circuit may receive and transmit synchronous data to and from another <u>device</u>, such as a compact disk player, via a synchronous receiver 30 and a synchronous transmitter 32, respectively. (Gross, Col. 4, lines 48-53.) The circuit may further communicate control data to and from the circuit with a serial data I/O port 24.   (Gross, Col. 4, lines 43-45 and lines 53-55.) Gross is silent on a multi-tasking operating system. The software described in Gross, such as the network interrupt handler 46, is included in transceivers that include "standard Ethernet transceivers ... augmented by a simple timing circuit." (Gross, Col. 2, lines 6-7; and Fig. 2A.) Thus, the particular circuit described by Gross fails to describe the recited features of "a network interface driver executable <u>within the multi-tasking operating system</u>."

Gross fails to describe the features of claim 1 of "the network interface driver executable to receive via the network interface a stream of packets for the applications, where the stream of packets includes data packets <u>and</u> isochronous audio packets, transmission of the isochronous audio packets is in response to receipt of <u>a respective synchronization packet</u>, the isochronous audio packets include isochronous audio data, and the data packets are <u>unrelated</u> to the isochronous audio data" (emphasis Applicant's). Gross describes receiving isochronous data <u>and</u> asynchronous data. (Gross, col. 6, lines 17-31.) However, in sharp contrast to the recited features, Gross only describes the received asynchronous data as including data <u>related</u> to the isochronous data. The asynchronous data includes control signal data from which to generate control signals on I/O ports, 24 and 26. (Gross, Col. 6, lines 30-36.) The "control signals [are] associated with <u>synchronous</u> input/output data that is to be transmitted, or received, over the network" (Gross, Col 4, lines 55-59) (emphasis Applicant's). The asynchronous data also includes reservation requests, which are related to transmission of the synchronous data.   (Gross, Col. 6, lines 37-38.) Therefore Gross fails to describe the features of "... the stream of packets includes data packets <u>and</u> isochronous audio packets ... the data packets are <u>unrelated</u> to the isochronous audio data."

As acknowledged on page 4 of the Office Action, Gross fails to describe the features of claim 1 of "an isochronous audio driver executable within the multi-tasking operating system." (Office Action, p. 4, lines 17-18.) Additionally, Gross fails to describe the features of "the isochronous audio driver is executable to decode isochronous audio packets in the stream of packets, to provide decoded audio data included in the isochronous audio packets to the isochronous audio application, and to pass the data packets unmodified to a protocol stack, the protocol stack being executable within the multi-tasking operating system to provide information in the data packets to the other applications." (*Contra*, Office Action, p. 4, line14-16.) For the reasons provided above, Gross fails to describe the network interface driver and the isochronous audio driver as recited in claim 1. Even if a frame interrupt handler 52 and a processor 50 described in Figure 2B of Gross were construed to be the recited "the network interface driver" and "isochronous audio driver," respectively, which is clearly improper, then the processor 50 passes isochronous data "out over the synchronous I/O 68," which is hardware, not "to the isochronous audio application" as recited in the claims. (Gross, Col. 6, lines 27-28; *contra*, Office Action, p. 4, lines.) Furthermore, the processor 50 does not "pass the data packets unmodified to a protocol stack." Therefore, Gross fails to describe the features of "an isochronous audio driver executable within the multi-tasking operating system ... to provide decoded audio data included in the isochronous audio packets to the isochronous audio application, and to pass the data packets unmodified to a protocol stack."

Gross also fails to describe the features of "the network interface driver is executable to provide the stream of packets to the isochronous audio driver in response to an interrupt request provided to the network interface by the multi-tasking operating system; [and] the execution of the isochronous audio driver being in response to said interrupt request provided to the network interface by the multi-tasking operating system" (emphasis Applicant's) (contra, Gross, p. 5, lines 8-13. In contrast, Gross describes executing software in response to interrupts from no less than three sources. In particular, Gross describes executing the network interrupt handler 46 in response to interrupts generated by an Ethernet controller 12 and an ordered persistent timer 20.

(Gross, Col. 5, line 45-Col. 6, line 5.) Gross further describes a frame interrupt handler 52 that builds a frame of synchronous data from the isochronous data in response to an interrupt generated by an <u>oscillator</u> 66. (Col. 6, lines 20-25.) None of the interrupts described in Gross are generated by a multi-tasking operating system. The network interrupt handler and the frame interrupt handler are executed in response to interrupts generated by different respective hardware components. Thus, even if the "network interrupt hander 46" and the "frame interrupt handler 52" described in Gross were construed as "the network interface driver" and the "isochronous audio driver," respectively – which is clearly improper – then Gross fails to describe the features of "the network interface driver is executable … <u>in response to an interrupt request</u> provided to the network interface by the multi-tasking operating system; [and] the execution of the isochronous audio driver being <u>in response to said interrupt request</u>." For at least the aforementioned reasons, Gross fails to describe all of the features of claim 1.

Dinallo also fails to describe the missing features. For example, Denallo fails to describe the features of claim 1 of "a network interface driver executable <u>within the multi-tasking operating system</u>, the network interface driver executable to receive via the network interface a stream of packets for the applications, where the stream of packets includes data packets <u>and</u> isochronous audio packets, transmission of the isochronous audio packets is in response to receipt of <u>a respective synchronization packet</u>, the isochronous audio packets include isochronous audio data, and the data packets are <u>unrelated</u> to the isochronous audio data." Dinallo is silent on "packets." Denallo is silent on "where … transmission of the isochronous audio packets is in response to receipt of <u>a respective synchronization packet</u>." Dinallo is even silent on "network." Accordingly, Dinallo fails to describe the features of "a network interface driver…" as recited in claim 1.

Dinallo fails to describe the features of claim 1 of "the isochronous audio driver is executable to decode isochronous audio packets in the stream of packets, to provide decoded audio data included in the isochronous audio packets to the isochronous audio application, and to pass the data packets unmodified <u>to a protocol stack</u>, the protocol

stack being executable within the multi-tasking operating system to provide information in the data packets to the other applications." Dinallo is silent on "packets." As acknowledged in the Office Action, Dinallo fails to describe "a protocol stack." (Office Action, p. 5, lines 1-2.) Therefore, Dinalo clearly fails to describe the features of "the isochronous audio driver is executable … to pass the data packets unmodified to a protocol stack, the protocol stack being executable within the multi-tasking operating system to provide information in the data packets to the other applications."

Anttila fails to bridge the gap. For example, Anttila fails to describe the features of "the network interface driver is executable to provide the stream of packets to the isochronous audio driver … the isochronous audio driver is executable to decode isochronous audio packets in the stream of packets, to provide decoded audio data included in the isochronous audio packets to the isochronous audio application, and to pass the data packets unmodified to a protocol stack, the protocol stack being executable within the multi-tasking operating system to provide information in the data packets to the other applications, the execution of the isochronous audio driver being in response to said interrupt request provided to the network interface by the multi-tasking operating system." Anttila describes a protocol stack 8 which prepares data for a transfer to a network interface 9. (Anttila, ¶[0006]; Fig. 1 .) However, Anttila is silent on "network interface driver," "packet," "interrupt," and an "isochronous audio driver" as recited in the claim 1.

Shay, Smyers, and Ruberg were cited for features not recited in claim 1. Additionally, Shay, Smyers, and Ruberg fail to describe all of the features of claim 1. For the reasons provided above, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg fail to describe all of the features of claim 1. Accordingly, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest all of the features of claim 1.

Claims 2-10 and 68

Claims 2-10 and 68 depend from, and include the features of, claim 1. Thus, claims 2-10 and 68 are allowable for at least the same reasons that claim 1 is allowable.

Another reason claim 2 is allowable is that, contrary to the assertion on page 5 of the Office Action, Gross fails to describe the features of "in response to <u>only one</u> interrupt request from the network interface, the multi-tasking operating system executes the network interface driver, the isochronous audio driver and the isochronous audio application <u>as a group</u> to process isochronous audio packets received from and transmitted via the switched network" (emphasis Applicant's). In sharp contrast, even if Gross were to describe the network interface driver, the isochronous audio driver and the isochronous audio application recited in claim 2, which it clearly does not, Gross describes only the frame interrupt handler and the audio/video processor 50 executing in response to the clock pulse from oscillator to build a frame "for processing by audio/video processor 50." (Col. 6, lines 18-28.)

Another reason claim 3 is allowable is that, contrary to the assertion on page 5 of the Office Action, Gross fails to describe the features of "where the network interface driver, the isochronous audio driver and the isochronous audio application are executed sequentially <u>without interruption</u> when an isochronous audio packet is received from the switched network" (emphasis Applicant's). In sharp contrast, even if Gross were to describe the network interface driver, the isochronous audio driver and the isochronous audio application recited in claim 2, which it clearly does not, Gross describes only the frame interrupt handler and the audio/video processor 50 executing in response to the clock pulse from oscillator to build a frame "for processing by audio/video processor 50." (Col. 6, lines 18-28.)

There is also another reason that claim 5 is allowable. As explained above in connection with claim 1, the cited references fail to describe all of the features of claim 1. To the Applicant's knowledge, "WINDOWS, Unix, or Linux" fails to describe all of the missing features.

Even if the cited references and "WINDOWS, Unix or Linux" combined were to describe all of the features included in claim 5, which is clearly not the case, it would not be obvious to modify Gross to use "Windows, Unix or Linux" to obtain the computer system of claim 5 because such a modification would change the principle of operation of Gross. For example, even if the Ethernet controller 12 and/or the Ethernet

transceiver 10 were "a network interface configured to operate within the operating system," which is clearly not the case, then the node device on the network described in Gross still requires the additional timing circuit 20 to be wired to the Ethernet controller 12 and/or the Ethernet transceiver 10. (Gross, Col. 2, lines 6-7; and Fig. 2A.) The additional timing circuit 20 is central to the operation of the circuit described in Gross. Gross recognizes the benefits of using "an unmodified Ethernet network," but nonetheless requires augmenting standard Ethernet transceivers and controllers with at least the timing circuit 20. (Gross, Col. 2, lines 6-7; and Fig. 2A.) If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. MPEP § 2143.01(VI); In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). For the foregoing reasons, it would not be obvious to modify Gross to use "WINDOWS, Unix or Linux" to obtain the computer system recited in claim 5.

Claim 11

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 11 of:

> a network interface driver executable within the operating system, the network interface driver further executable to receive via the network interface a stream of data packets and isochronous audio packets for the applications, the isochronous audio packets including isochronous audio data, the data packets including information unrelated to the isochronous audio data, and transmission of the isochronous audio packets being in response to receipt of a respective synchronization packet;
> an isochronous audio driver in communication with the network interface driver and at least two of the applications, where the isochronous audio driver is executable to identify and decode isochronous audio packets for extraction of audio data, where the network interface driver is executable to provide the stream of packets to the isochronous audio driver in response to an interrupt request provided to the network interface by the multi-tasking operating system; and
> a protocol stack adapted to communicate with the isochronous audio driver and applications other than an isochronous audio application;

where the isochronous audio driver and the protocol stack are configured to execute within the multi-tasking operating system; and

where the isochronous audio driver is executable both to provide the audio data to the isochronous audio application, and to pass the data packets to the protocol stack unaltered by the isochronous audio driver in response to the interrupt request.

Claims 13-19

Claims 13-19 depend from, and include the features of, claim 11. Thus, claims 13-19 are allowable for at least the same reasons that claim 11 is allowable.

Claim 20

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 20 of:

an isochronous audio driver in communication with the isochronous audio application, the isochronous audio driver executable to convert the formatted audio data to isochronous audio data and buffer the isochronous audio data, where the isochronous audio driver and the isochronous audio application are executable within a multi-tasking operating system;

where the isochronous audio driver is executable to receive data packets from a protocol stack executable within the multi-tasking operating system, the data packets including information unassociated with the isochronous audio data;

where the isochronous audio driver is executable to receive and decode a synchronization packet receivable from a switched network, where the synchronization packet includes a frame number;

where in response to receipt of the synchronization packet, the isochronous audio driver is executable to generate an isochronous audio packet that includes buffered isochronous audio data and the frame number, the isochronous audio packet transmittable over the switched network; and

where, in response to only one interrupt request generated by the multi-tasking operating system, the isochronous audio driver and the isochronous audio application execute as a group to process isochronous audio packets received from and transmitted via the switched network.

Claims 21-28

Claims 21-28 depend from, and include the features of, claim 20. Thus, claims 21-28 are allowable for at least the same reasons that claim 20 is allowable.

Claim 29

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 29 of:

> a network interface driver executable within the multi-tasking operating system to send and receive via the network interface a stream of packets for the plurality of applications; and
> isochronous audio software executable with the multi-tasking operating system to process received isochronous audio packets, and generate isochronous audio packets from audio data for transmission;
> where the received stream of packets includes data packets, synchronization packets and isochronous audio packets and the sent stream of packets includes data packets and isochronous audio packets, where transmission of each of the isochronous audio packets is in response to receipt of a respective one of the synchronization packets, and where the data packets include information unrelated to the audio data;
> where the network interface driver is executable to provide the stream of packets to the isochronous audio software in response to an interrupt request provided to the network interface by the multi-tasking operating system;
> where the isochronous audio software is executable to communicate with the network interface driver and the applications, the isochronous audio software further executable to decode isochronous audio packets from the received stream and further executable to pass data packets from the received stream to the other applications through a protocol stack without any processing of the data packets by the isochronous audio software, the execution of the isochronous audio software being in response to said interrupt request provided to the network interface by the multi-tasking operating system; and
> where the isochronous audio software is further executable to initiate transmission of the isochronous audio packets generated by the isochronous audio software in the sent stream of packets in response to receipt of a synchronization packet in the received stream of packets.

Claims 30-33

Claims 30-33 depend from, and include the features of, claim 29. Thus, claims 30-33 are allowable for at least the same reasons that claim 29 is allowable.

Claim 34

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 34 of:

> a multi-tasking operating system adapted to execute a plurality of applications, the network interface configured to operate within the multi-tasking operating system, the network interface operable to send and receive isochronous audio packets and data packets via a switched network in response to an interrupt request provided to the network interface by the multi-tasking operating system;
>
> isochronous audio software that is executable within the multi-tasking operating system substantially in parallel with other applications executable by the multi-tasking operating system, the isochronous audio software executable to process isochronous audio packets received from or provided to the network interface in response to said interrupt request provided to the network interface by the multi-tasking operating system, where the isochronous audio packets each include audio data, and transmission of each of the isochronous audio packets is in response to receipt of a respective synchronization packet; and
>
> the isochronous audio software is further executable to pass data packets received from the network interface to a protocol stack accessible by at least one of the other applications, the data packets including information unrelated to the audio data.

Claims 35-41

Claims 35-41 depend from, and include the features of, claim 34. Thus, claims 35-41 are allowable for at least the same reasons that claim 34 is allowable.

Claim 42

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 42 of:

a network interface driver executable within the multi-tasking operating system, the network interface driver executable to receive isochronous audio packets and data packets from the network interface, the isochronous audio packets including isochronous audio data, and the data packets including information unrelated to the isochronous audio data, where transmission of each of the isochronous audio packets is in response to receipt of a respective one of a plurality of synchronization packets, and the network interface driver is further executable to provide the data packets and the isochronous audio packets to the isochronous audio driver in response to an interrupt request provided to the network interface by the multi-tasking operating system; and

isochronous audio software executable within the multi-tasking operating system substantially in parallel with other applications executable within the multi-tasking operating system, the isochronous audio software executable to extract audio data from the isochronous audio packets and pass the data packets unmodified to at least one of the other applications in response to the interrupt request.

Claims 43-50

Claims 43-50 depend from, and include the features of, claim 42. Thus, claims 43-50 are allowable for at least the same reasons that claim 42 is allowable.

Claim 51

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 51 of:

a network interface driver executable within the multi-tasking operating system to transmit isochronous audio packets via the network interface, to receive data packets and synchronization packets from a switched network via the network interface, and to provide a first interrupt request to the multi-tasking operating system in response to receipt of one of the synchronization packets, where the multi-tasking operating system provides a second interrupt request to the network interface in response to receipt of the first interrupt request; and

isochronous audio software that is executable within the multi-tasking operating system substantially in parallel with other applications executable within the multi-tasking operating system, the isochronous audio software executable to format audio data into the isochronous audio packets for transmission by the network interface driver in response to receipt of the second interrupt request by the network interface;

the isochronous audio software further executable within the multi-tasking operating system to provide the data packets to a protocol stack, the protocol stack in communication with at least one of the other applications, the data packets unrelated to the audio data, the protocol stack being for the at least one of the other applications to communicate on the switched network.

Claims 52, 53, and 55-57

Claims 52, 53, and 55-57 depend from, and include the features of, claim 51. Thus, claims 52, 53, and 55-57 are allowable for at least the same reasons that claim 51 is allowable.

Claim 58

For at least the foregoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest the features of claim 58 of:

isochronous audio software that is executable within the multi-tasking operating system substantially in parallel with other applications executable within the multi-tasking operating system, the isochronous audio software executable to communicate isochronous audio packets with the switched network via the network interface, where transmission of each of the isochronous audio packets is in response to receipt of a respective one of a plurality of synchronization packets, the applications include the isochronous audio software, and the isochronous audio software is executable to communicate the isochronous audio packets via the network interface in response to receipt by the network interface of an interrupt request provided by the multi-tasking operating system, transmission of the isochronous audio packets by the network interface also being in response to said interrupt request;

the isochronous audio software further executable within the multi-tasking operating system to communicate data packets between at least one of the other applications and the network interface, the data packets including information unrelated to the isochronous audio data, the isochronous data packets including the isochronous audio data, where the data packets and the isochronous audio packets are formatted in accordance with different respective protocols.

Claims 59 and 60

Claims 59-60 depend from, and include the features of, claim 58. Thus, claims 59-60 are allowable for at least the same reasons that claim 58 is allowable.

For the forgoing reasons, Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, fail to teach or suggest all of the features of claims 1-11 and 13-53, 55-60, and 68. Claims 54 and 61-67 are cancelled rendering their rejections moot. Accordingly, Applicant respectfully requests withdrawal of the 35 USC §103(a) rejections of claims 1-11 and 13-68. Gross, Dinallo, Anttila, Shay, Smyers, and Ruberg, either alone or in combination, also fail to teach or suggest all of the features of newly added claims 69-75.

The present pending claims of this application are allowable and Applicant respectfully requests the Examiner to issue a Notice of Allowance for this application. Should the Examiner deem a telephone conference to be beneficial in expediting allowance/examination of this application, the Examiner is invited to call the undersigned attorney at the telephone number listed below.

Respectfully submitted,

/Michael E. Hussey/

Michael E. Hussey
Attorney Reg. No. 63,265
Attorney for Applicant

MEH/sev

BRINKS HOFER GILSON & LIONE
CUSTOMER NO. 81165
Telephone: 317-636-0886
Facsimile: 317-634-6701